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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,982	11/28/2001	Gyanesh P. Khare		7640

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EXAMINER

GRIFFIN, WALTER DEAN

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 10/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/021,982

Applicant(s)

KHARE, GYANESH P.

Examiner

Walter D. Griffin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) 48-63 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

The rejection of claims 1-47 under the judicially created doctrine of obviousness-type double patenting is withdrawn in view of the Terminal Disclaimer filed on July 19, 2004. A new rejection is discussed below.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6, 12, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Khare et al. (US 5,439,867).

The Khare reference discloses a sorbent composition that is suitable for removing sulfur from a hydrocarbon fluid. The sorbent comprises a support that is a mixture of alumina (0.5 to 30 wt%), silica (5 to 85 wt%), and zinc oxide (10 to 90 wt%). The sorbent may also contain a silicate such as sodium silicate. A promoter metal such as nickel is also present. The promoter is present in an amount ranging from 0.1 to 15 weight percent. The sorbent has a mean particle size ranging from about 20 to about 500 micrometers. Percent attrition, as shown in Tables I and III, is less than 20%. See column 2, lines 40-51; column 3, lines 1-24 and 57-64; column 4, lines 57-65; and column 6, lines 27-49.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 5, 7-11, and 14-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khare et al. (US 5,439,867) in view of Bailey et al. (US 4,634,515).

The Khare reference discloses a sorbent composition that is suitable for removing sulfur from a hydrocarbon fluid. The sorbent comprises a support that is a mixture of alumina (0.5 to 30 wt%), silica (5 to 85 wt%), and zinc oxide (10 to 90 wt%). The sorbent may also contain a silicate such as sodium silicate (1 to 20 wt%). A promoter metal such as nickel is also present.

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The promoter is present in an amount ranging from 0.1 to 15 weight percent. The sorbent has a mean particle size ranging from about 20 to about 500 micrometers. Percent attrition, as shown in Tables I and III, is less than 20%. The sorbent is prepared by mixing the alumina, silica, and zinc oxide and then granulating this mixture. The promoter is then added to the granulate. The silicate is added to the support mixture. See column 2, lines 40-51; column 3, lines 1-24 and 57-64; column 4, lines 57-65; and column 6, lines 27-49.

The Khare reference does not disclose that the promoter is reduced (e.g., reduced valence nickel), does not disclose a process for producing the sorbent in which the promoter is reduced, does not disclose spray drying, and does not disclose all the claimed methods for incorporating the silicate into the sorbent.

The Bailey reference discloses a sorbent that is used for removing sulfur from hydrocarbons. The sorbent comprises nickel that is in the reduced state. See column 3, lines 10-55.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Khare by including a reducing step to produce a sorbent have a reduced promoter as suggested by Bailey because a sorbent having a reduced promoter provides an improved sulfur capacity.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Khare by spray drying because spray drying techniques, as discussed by Khare, will produce the desired fluidizable sorbent.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Khare by adding the silicate to the

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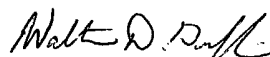
composition by any of the claimed steps because as long as the silicate is present in the final material, the properties imparted by such silicate component would be expected to be present regardless of the actual method of adding the silicate to the material.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is (571) 272-1447. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Walter D. Griffin  
Primary Examiner  
Art Unit 1764

WG  
October 13, 2004